JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER
Vol. 9, No. 4, October–December 1995

1995 *Journal of Thermophysics and Heat Transfer* Index

How to Use the Index

In the Subject Index, pages 806–810, each technical paper is listed under a maximum of three appropriate headings. Note the number in boldface type following each paper title, and use that number to locate the paper in the Chronological Index. The Author Index, page 811, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 812–816, lists all papers by their unique code numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based, as well as the "CP" or conference volume number if the paper was published in a bound collection of meetings papers. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. If the paper to which they refer was published prior to 1995, that paper also will appear in both the Subject and Chronological Indexes. Authors of Comments also are listed in the Author Index.

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

Comparison of Theory with Atomic Oxygen Radiance Data from a Rocket Flight **T95-096**

Deceleration Systems

Depriming/Rewetting of Arterial Heat Pipes: Comparison with Share-II Flight Experiment **T95-013**

Powerplant Integration

Startup Characteristics of a Potassium Heat Pipe from the Frozen State **T95-015**

Simulation

Mass Spectrometric and Electrostatic Probe Measurements of N_2/O_2 Plasma Flow **T95-062**

Weather Hazards

Heat Transfer Variation on Protuberances and Surface Roughness Elements **T95-023**

Energy

Conservation

Free Convection in a Horizontal Enclosure Partly Filled with a Porous Medium **T95-122**
Forced Convection in Ducts with a Boundary Condition of the Third Kind **T95-123**

Rotating Machinery

Simulation of Turbulent Heat Transfer in a Rotating Duct **T95-055**

Solar Power

Non-Kirchhoff Surface Using Media with Directionally Varying Absorption Efficiency **T95-026**
Theoretical Investigation of Particles Having Directionally Dependent Absorption Cross Section **T95-025**
Startup Characteristics of a Potassium Heat Pipe from the Frozen State **T95-015**

Stirling Engine

Near-Isothermal Regenerator: A Perturbation Analysis **T95-113**
Stirling Cryocooler Model with Stratified Cylinders and Quasisteady Heat Exchangers **T95-017**

Thermionic

High-Temperature Performance of an Integral Cesium Reservoir in a Thermionic Converter **T95-050**

Fluid Dynamics

Boundary Layers and Heat Transfer—Laminar

Forced Convection in Ducts with a Boundary Condition of the Third Kind **T95-123**
Effect of Additives on the Regeneration of a Dilute Absorbent **T95-112**
Viscous Dissipation in Non-Newtonian Flows: Implications for the Nusselt Number **T95-111**
Nonequilibrium Boundary-Layer Effects on the Aerodynamic Heating of Hypersonic Waverider Vehicles **T95-092**
Thermal Stratification Effects Near a Vertical Ice Slab in Cold Water **T95-082**
Study of Transpiration Cooling over a Flat Plate at Hypersonic Mach Numbers **T95-081**

Boundary Layers and Heat Transfer—Turbulent

Role of Buoyancy in Fuel-Thermal-Stability Studies **T95-021**

Boundary–Layer Stability and Transition

Analysis of the Photodiode Boundary-Layer Transition Indicator **T95-073**

Computational Fluid Dynamics

Two-Temperature Saha Equation: A Misunderstood Problem **T95-124**
Effects of Upstream Wall Heating on Mixed Convection in Separated Flows **T95-108**
Adaptive Finite Element Method for Mixed Convection **T95-107**
Numerical Simulation of Time-Dependent Thermocapillary Convection in Layered Fluid Systems **T95-106**
Modeling of Soot Formation and Oxidation in Turbulent Diffusion Flames **T95-098**
Comparison of Theory with Atomic Oxygen Radiance Data from a Rocket Flight **T95-096**
Computation of Hypersonic Flows with Finite Catalytic Walls **T95-071**
Parallel Monte Carlo Simulation of Three-Dimensional Flow over a Flat Plate **T95-069**
Coupled Thermofluid Analysis Method with Application to Thermodynamic Vent Systems **T95-036**
Spectral Element-Fourier Method for Unsteady Conjugate Heat Transfer in Complex Geometry Flows **T95-032**
Parallel Finite Element Algorithm for Three-Dimensional Inviscid and Viscous Flow **T95-031**

Hydrodynamics

Forced Convection in Ducts with a Boundary Condition of the Third Kind **T95-123**

Hypersonic Flow

Two-Temperature Saha Equation: A Misunderstood Problem **T95-124**
Heat Transfer Measurement on a Waverider at Mach 10 Using Fluorescent Paint **T95-093**
Study of Transpiration Cooling over a Flat Plate at Hypersonic Mach Numbers **T95-081**
Computation of Hypersonic Flows with Finite Catalytic Walls **T95-071**
Parallel Monte Carlo Simulation of Three-Dimensional Flow over a Flat Plate **T95-069**
Blunt Body Rarefied Wakes for Earth Entry **T95-068**
Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 1: Model Development **T95-064**

JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER
Vol. 9, No. 4, October–December 1995

1995 *Journal of Thermophysics and Heat Transfer* Index

How to Use the Index

In the Subject Index, pages 806–810, each technical paper is listed under a maximum of three appropriate headings. Note the number in boldface type following each paper title, and use that number to locate the paper in the Chronological Index. The Author Index, page 811, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 812–816, lists all papers by their unique code numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based, as well as the "CP" or conference volume number if the paper was published in a bound collection of meetings papers. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. If the paper to which they refer was published prior to 1995, that paper also will appear in both the Subject and Chronological Indexes. Authors of Comments also are listed in the Author Index.

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

Comparison of Theory with Atomic Oxygen Radiance Data from a Rocket Flight **T95-096**

Deceleration Systems

Depriming/Rewetting of Arterial Heat Pipes: Comparison with Share-II Flight Experiment **T95-013**

Powerplant Integration

Startup Characteristics of a Potassium Heat Pipe from the Frozen State **T95-015**

Simulation

Mass Spectrometric and Electrostatic Probe Measurements of N_2/O_2 Plasma Flow **T95-062**

Weather Hazards

Heat Transfer Variation on Protuberances and Surface Roughness Elements **T95-023**

Energy

Conservation

Free Convection in a Horizontal Enclosure Partly Filled with a Porous Medium **T95-122**
Forced Convection in Ducts with a Boundary Condition of the Third Kind **T95-123**

Rotating Machinery

Simulation of Turbulent Heat Transfer in a Rotating Duct **T95-055**

Solar Power

Non-Kirchhoff Surface Using Media with Directionally Varying Absorption Efficiency **T95-026**
Theoretical Investigation of Particles Having Directionally Dependent Absorption Cross Section **T95-025**
Startup Characteristics of a Potassium Heat Pipe from the Frozen State **T95-015**

Stirling Engine

Near-Isothermal Regenerator: A Perturbation Analysis **T95-113**
Stirling Cryocooler Model with Stratified Cylinders and Quasisteady Heat Exchangers **T95-017**

Thermionic

High-Temperature Performance of an Integral Cesium Reservoir in a Thermionic Converter **T95-050**

Fluid Dynamics

Boundary Layers and Heat Transfer—Laminar

Forced Convection in Ducts with a Boundary Condition of the Third Kind **T95-123**
Effect of Additives on the Regeneration of a Dilute Absorbent **T95-112**
Viscous Dissipation in Non-Newtonian Flows: Implications for the Nusselt Number **T95-111**
Nonequilibrium Boundary-Layer Effects on the Aerodynamic Heating of Hypersonic Waverider Vehicles **T95-092**
Thermal Stratification Effects Near a Vertical Ice Slab in Cold Water **T95-082**
Study of Transpiration Cooling over a Flat Plate at Hypersonic Mach Numbers **T95-081**

Boundary Layers and Heat Transfer—Turbulent

Role of Buoyancy in Fuel-Thermal-Stability Studies **T95-021**

Boundary–Layer Stability and Transition

Analysis of the Photodiode Boundary-Layer Transition Indicator **T95-073**

Computational Fluid Dynamics

Two-Temperature Saha Equation: A Misunderstood Problem **T95-124**
Effects of Upstream Wall Heating on Mixed Convection in Separated Flows **T95-108**
Adaptive Finite Element Method for Mixed Convection **T95-107**
Numerical Simulation of Time-Dependent Thermocapillary Convection in Layered Fluid Systems **T95-106**
Modeling of Soot Formation and Oxidation in Turbulent Diffusion Flames **T95-098**
Comparison of Theory with Atomic Oxygen Radiance Data from a Rocket Flight **T95-096**
Computation of Hypersonic Flows with Finite Catalytic Walls **T95-071**
Parallel Monte Carlo Simulation of Three-Dimensional Flow over a Flat Plate **T95-069**
Coupled Thermofluid Analysis Method with Application to Thermodynamic Vent Systems **T95-036**
Spectral Element-Fourier Method for Unsteady Conjugate Heat Transfer in Complex Geometry Flows **T95-032**
Parallel Finite Element Algorithm for Three-Dimensional Inviscid and Viscous Flow **T95-031**

Hydrodynamics

Forced Convection in Ducts with a Boundary Condition of the Third Kind **T95-123**

Hypersonic Flow

Two-Temperature Saha Equation: A Misunderstood Problem **T95-124**
Heat Transfer Measurement on a Waverider at Mach 10 Using Fluorescent Paint **T95-093**
Study of Transpiration Cooling over a Flat Plate at Hypersonic Mach Numbers **T95-081**
Computation of Hypersonic Flows with Finite Catalytic Walls **T95-071**
Parallel Monte Carlo Simulation of Three-Dimensional Flow over a Flat Plate **T95-069**
Blunt Body Rarefied Wakes for Earth Entry **T95-068**
Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 1: Model Development **T95-064**

Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 2: Results T95-065
Hypersonic Hydrogen Combustion in the Thin Viscous Shock Layer T95-030
Theory and Validation of the Physically Consistent Coupled Vibration-Chemistry-Vibration Model T95-028

Inlet, Nozzle, Diffusor, and Channel Flows

Effect of Additives on the Regeneration of a Dilute Absorbent T95-112
Validation of Multitemperature Nozzle Flow Code T95-001

Jets, Wakes, and Viscid-Inviscid Flow Interactions

Particle Drag Coefficient in Solid Rocket Plumes T95-087
Blunt Body Rarefied Wakes for Earth Entry T95-068
Influence of Exit Angle on Radial Jet Reattachment and Heat Transfer T95-022
Particle Drag Coefficient in Solid Rocket Plumes T95-087
Boiling Heat Transfer in the Quenching of a Hot Tube Under Microgravity T95-039
Influence of Two-Phase Thermocapillary Flow on Liquid Retention in Microscopic Pores T95-020

Plasmadynamics and MHD

Mass Spectrometric and Electrostatic Probe Measurements of N_2/O_2 Plasma Flow T95-062
Investigation of Chemical Affinity for Reacting Flows of Non-Local Thermal Equilibrium Gases T95-005

Rarefied Flows

Parallel Monte Carlo Simulation of Three-Dimensional Flow over a Flat Plate T95-069
Blunt Body Rarefied Wakes for Earth Entry T95-068
Vibrational Nonequilibrium Modeling Using Direct Simulation Part 1: Continuous Internal Energy T95-066
Corrective Term in Wall Slip Equations for Knudsen Layer T95-056

Reacting Flows and Combustion

Modeling of Soot Formation and Oxidation in Turbulent Diffusion Flames T95-098
Mass Spectrometric Investigation of High Enthalpy Plasma Flows T95-095
Nonequilibrium Boundary-Layer Effects on the Aerodynamic Heating of Hypersonic Waverider Vehicles T95-092
Numerical Solutions to Nozzle Flows with Vibrational Nonequilibrium T95-029
Computation of Nonequilibrium Radiating Shock Layers T95-004
Validation of Multitemperature Nozzle Flow Code T95-001

Shock Waves and Detonations

Viscous Normal Shock Solutions Including Chemical, Thermal, and Radiative Nonequilibrium T95-090

Supersonic Flow

Mass Spectrometric and Electrostatic Probe Measurements of N_2/O_2 Plasma Flow T95-062

Viscous Non-Boundary-Layer Flows

Adaptive Finite Element Method for Mixed Convection T95-107
Numerical Simulation of Time-Dependent Thermocapillary Convection in Layered Fluid Systems T95-106
Behavior of a Meniscus Subjected to Transient Accelerations for Increasing Capillary Numbers T95-079

Guidance, Control, and Dynamics Technology

Optimization Techniques

On Optimum Spines T95-047

Interdisciplinary Topics

Analytical and Numerical Methods

High-Temperature Performance of an Integral Cesium Reservoir in a Thermionic Converter T95-050

Atmospheric and Space Sciences

Effect of Line Doppler Shift on Plume Infrared Signatures T95-097

Lasers and Laser Applications

Characterization of Arcjet Flows Using Laser-Induced Fluorescence T95-003

Sensor Systems

Thermal Response of Thin-Film High-T_c Superconductors to Modulated Irradiation T95-059

Launch Vehicle and Missile (LV/M) Technology

Thermal Protection Systems

Scattering Characteristics of Fibrous Media Containing Closely Spaced Parallel Fibers T95-060
Modeling of Heat Transfer Processes at Catalytic Materials in Shock Tube T95-048
Transient Compressible Flow and Heat Transfer Within a Heterogeneous Porous System T95-019

Trajectories and Tracking Systems

Atomic Species Radiation from Air Modeled with Direct Simulation Monte Carlo Method T95-067

Propulsion

Airbreathing Propulsion

Simulation of Turbulent Heat Transfer in a Rotating Duct T95-055

Electric and Advanced Space Propulsion

Investigation of Chemical Affinity for Reacting Flows of Non-Local Thermal Equilibrium Gases T95-005

Solid Rocket Motors and Missile Systems

Kinetics of Pyrolysis Mass Loss from Cured Phenolic Resin T95-046

Supersonic Combustion

Hypersonic Hydrogen Combustion in the Thin Viscous Shock Layer T95-030

Space Technology

Aerobraking Configurations/ Aerothermodynamics

Indirect Determination of Heat Flux to a Lander Heat Protection System T95-072

Space Experiments

Numerical Simulation of Time-Dependent Thermocapillary Convection in Layered Fluid Systems T95-106

Spacecraft Power

High-Temperature Performance of an Integral Cesium Reservoir in a Thermionic Converter T95-050

Spacecraft Structural Configuration, Design, and Analysis

Preliminary Temperature Stabilization of Space Telescopes T95-080

Spacecraft Thermal Management

Effect of Spray Characteristics on Spray Cooling with Liquid Nitrogen T95-114
Free Expansion Study of Liquid Nitrogen T95-077
Spray Cooling Characteristics Under Reduced Gravity T95-054
Transient Experiments of an Inclined Copper-Water Heat Pipe T95-014

Structural Mechanics and Materials

Thermal Effects

Galileo High-Gain Antenna Deployment Anomaly Thermal Analysis Support T95-116

Thermophysics and Heat Transfer

Ablation, Pyrolysis, Thermal Decomposition and Degradation

Projectile Fin Damage from Propellant Combustion T95-118
Indirect Determination of Heat Flux to a Lander Heat Protection System T95-072
Ablation Analysis of the Shuttle Orbiter Oxidation Protected Reinforced Carbon–Carbon T95-070
Kinetics of Pyrolysis Mass Loss from Cured Phenolic Resin T95-046

Aerothermodynamics/Thermal Protection

Projectile Fin Damage from Propellant Combustion **T95-118**
Mass Spectrometric Investigation of High Enthalpy Plasma Flows **T95-095**
Nose Cavity Effects on Blunt Body Pressure and Temperatures at Mach 5 **T95-094**
Heat Transfer Measurement on a Waverider at Mach 10 Using Fluorescent Paint **T95-093**
Nonequilibrium Boundary-Layer Effects on the Aerodynamic Heating of Hypersonic Waverider Vehicles **T95-092**
Viscous Normal Shock Solutions Including Chemical, Thermal, and Radiative Nonequilibrium **T95-090**
Study of Transpiration Cooling over a Flat Plate at Hypersonic Mach Numbers **T95-081**
Ablation Analysis of the Shuttle Orbiter Oxidation Protected Reinforced Carbon–Carbon **T95-070**
Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 2: Results **T95-065**
Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 1: Model Development **T95-064**
Characterization of a Nitrogen Flow Within a Plasma Wind Tunnel **T95-063**
Modeling of Heat Transfer Processes at Catalytic Materials in Shock Tube **T95-048**
Hypersonic Hydrogen Combustion in the Thin Viscous Shock Layer **T95-030**
Theory and Validation of the Physically Consistent Coupled Vibration-Chemistry-Vibration Model **T95-028**
Dependence of Heat Transfer to a Pulsating Stagnation Flow on Pulse Characteristics **T95-024**
Transient Compressible Flow and Heat Transfer Within a Heterogeneous Porous System **T95-019**
Cooling Panel Optimization for the Active Cooling System of a Hypersonic Aircraft **T95-018**
Computation of Nonequilibrium Radiating Shock Layers **T95-004**
Characterization of Arcjet Flows Using Laser-Induced Fluorescence **T95-003**

Boiling/Condensation

Spray Cooling Characteristics Under Reduced Gravity **T95-054**
On Optimum Spines **T95-047**
Pool Boiling Heat Transfer from Vertical Heater Array in Liquid Nitrogen **T95-040**
Boiling Heat Transfer in the Quenching of a Hot Tube Under Microgravity **T95-039**
Channel Height and Curvature Effects on Flow Boiling from an Electronic Chip **T95-038**
Spray Cooling of Power Electronics at Cryogenic Temperatures **T95-016**
Experimental Results for Capillary Looped Pipe Applied to Direct Cooling Method **T95-012**

Computational Heat Transfer

Free Convection in a Horizontal Enclosure Partly Filled with a Porous Medium **T95-122**
Low Prandtl Number Marangoni Convection with a Deforming Interface **T95-121**
Natural Convection in Horizontal-Layered Porous Annuli **T95-120**
Flow of Nitrogen and Superheated Steam Through Cement Mortar **T95-119**
Viscous Dissipation in Non-Newtonian Flows: Implications for the Nusselt Number **T95-111**
Adaptive Finite Element Method for Mixed Convection **T95-107**
Surface Length Scale Contributions to the Directional and Hemispherical Emissivity and Reflectivity **T95-099**
Mixed Convection in a Vertical Channel with Heated Blocks **T95-086**
Implicit Solution Method for a Cumulative Variable Formulation to Radiative/Conductive Transport **T95-083**
Finite Volume Radiative Heat Transfer Procedure for Irregular Geometries **T95-061**
Inverse Determination of Thermal Conductivity for One-Dimensional Problems **T95-044**
Coupled Thermofluid Analysis Method with Application to Thermodynamic Vent Systems **T95-036**
Unsteady Three-Dimensional Mixed Convective Airflow over a Horizontal Plate **T95-033**
Spectral Element-Fourier Method for Unsteady Conjugate Heat Transfer in Complex Geometry Flows **T95-032**
Parallel Finite Element Algorithm for Three-Dimensional Inviscid and Viscous Flow **T95-031**
Cumulative Variable Formulation for Transient Conductive and Radiative Transport in Participating Media **T95-027**
Non-Kirchhoff Surface Using Media with Directionally Varying Absorption Efficiency **T95-026**
Influence of Exit Angle on Radial Jet Reattachment and Heat Transfer **T95-022**
Role of Buoyancy in Fuel-Thermal-Stability Studies **T95-021**
Transient Compressible Flow and Heat Transfer Within a Heterogeneous Porous System **T95-019**
Cooling Panel Optimization for the Active Cooling System of a Hypersonic Aircraft **T95-018**
Comparison of Discrete Ordinates Formulations for Radiative Heat Transfer in Multidimensional Geometries **T95-006**

Cryogenics

Sensor Cooling by Direct Blowdown of a Coolant **T95-115**
Near-Isothermal Regenerator: A Perturbation Analysis **T95-113**
Free Expansion Study of Liquid Nitrogen **T95-077**
Thermal Response of Thin-Film High-T_c Superconductors to Modulated Irradiation **T95-059**
Pool Boiling Heat Transfer from Vertical Heater Array in Liquid Nitrogen **T95-040**
Coupled Thermofluid Analysis Method with Application to Thermodynamic Vent Systems **T95-036**
Influence of Two-Phase Thermocapillary Flow on Liquid Retention in Microscopic Pores **T95-020**
Stirling Cryocooler Model with Stratified Cylinders and Quasisteady Heat Exchangers **T95-017**
Spray Cooling of Power Electronics at Cryogenic Temperatures **T95-016**

Electronics Cooling

Effect of Spray Characteristics on Spray Cooling with Liquid Nitrogen **T95-114**
Effects of Upstream Wall Heating on Mixed Convection in Separated Flows **T95-108**
Mixed Convection in a Vertical Channel with Heated Blocks **T95-086**
Pool Boiling Heat Transfer from Vertical Heater Array in Liquid Nitrogen **T95-040**
Channel Height and Curvature Effects on Flow Boiling from an Electronic Chip **T95-038**
Spray Cooling of Power Electronics at Cryogenic Temperatures **T95-016**
Experimental Results for Capillary Looped Pipe Applied to Direct Cooling Method **T95-012**
Experimental Investigation of the Thermal Contact Conductance of Electroplated Silver Coatings **T95-010**

Forced Convection

Effect of Additives on the Regeneration of a Dilute Absorbent **T95-112**
Viscous Dissipation in Non-Newtonian Flows: Implications for the Nusselt Number **T95-111**
Analysis of Forced Convection Heat Transfer in Microencapsulated Phase Change Material Suspensions **T95-110**
Analysis of Thermal Energy Storage System with Conjugate Turbulent Forced Convection **T95-109**
Nose Cavity Effects on Blunt Body Pressure and Temperatures at Mach 5 **T95-094**
Simultaneous Heat and Mass Transfer in Packed Bed Catalytic Reactors **T95-076**
Analytical Method for Forced Convection from Flat Plates, Circular Cylinders, and Spheres **T95-075**
Analysis of Unsteady Forced Convection in Turbulent Duct Flow **T95-074**
Simulation of Turbulent Heat Transfer in a Rotating Duct **T95-055**
On Optimum Spines **T95-047**
Spectral Element-Fourier Method for Unsteady Conjugate Heat Transfer in Complex Geometry Flows **T95-032**
Dependence of Heat Transfer to a Pulsating Stagnation Flow on Pulse Characteristics **T95-024**
Heat Transfer Variation on Protuberances and Surface Roughness Elements **T95-023**
Influence of Exit Angle on Radial Jet Reattachment and Heat Transfer **T95-022**
Cooling Panel Optimization for the Active Cooling System of a Hypersonic Aircraft **T95-018**

Heat Conduction

Analysis of Thermal Energy Storage System with Conjugate Turbulent Forced Convection **T95-109**
Effect of Surface Deformations on Thermal Contact Conductance of Coated Junctions **T95-103**
Constitutive Convolution and Graph Theoretical Representations of Thermodynamic Processes: Thermal Conduction **T95-102**
Function Estimation in Predicting Temperature-Dependent Thermal Conductivity Without Internal Measurements **T95-101**
Effective Thermal Conductivity of a Saturated Porous Medium **T95-089**
Thermodynamic Analysis of the Influence of Electric Fields on Frost Formation **T95-085**
Implicit Solution Method for a Cumulative Variable Formulation to Radiative/Conductive Transport **T95-083**
Contact Conductance of Selected Metal–Matrix Composites **T95-058**
Modeling Transient Conduction from Isothermal Convex Bodies of Arbitrary Shape **T95-057**
Estimation of Thermal Properties and Surface Heat Flux in Carbon-Carbon Composite **T95-045**
Inverse Determination of Thermal Conductivity for One-Dimensional Problems **T95-044**

Enhancement of Thermal Contact Conductance of Coated Junctions T95-043
Investigation of the Freezing Blowby Phenomenon in Heat Pipes T95-041
Natural Convection in Inclined Enclosures with Multiple Conducting Partitions T95-035
Cumulative Variable Formulation for Transient Conductive and Radiative Transport in Participating Media T95-027
Thermal Contact Resistance Between Balls and Rings of a Bearing Under Axial, Radial, and Combined Loads T95-011
Experimental Investigation of the Thermal Contact Conductance of Electroplated Silver Coatings T95-010

Heat Pipes

Behavior of a Meniscus Subjected to Transient Accelerations for Increasing Capillary Numbers T95-079
Charge Optimization for a Triangular-Shaped Etched Micro Heat Pipe T95-049
Dynamic Behavior of an Unheated Meniscus Subjected to Transient Acceleration Field T95-042
Investigation of the Freezing Blowby Phenomenon in Heat Pipes T95-041
Startup Characteristics of a Potassium Heat Pipe from the Frozen State T95-015
Transient Experiments of an Inclined Copper-Water Heat Pipe T95-014
Depriming/Rewetting of Arterial Heat Pipes: Comparison with Share-II Flight Experiment T95-013

Melting/Solidification

Analysis of Forced Convection Heat Transfer in Microencapsulated Phase Change Material Suspensions T95-110
Analysis of Thermal Energy Storage System with Conjugate Turbulent Forced Convection T95-109
Thermodynamic Analysis of the Influence of Electric Fields on Frost Formation T95-085
Thermal Stratification Effects Near a Vertical Ice Slab in Cold Water T95-082
Visualization of Solidification Process in Kinetics Control System with Interferometry T95-078
Investigation of the Freezing Blowby Phenomenon in Heat Pipes T95-041
Depriming/Rewetting of Arterial Heat Pipes: Comparison with Share-II Flight Experiment T95-013

Mixed Convection

Effects of Upstream Wall Heating on Mixed Convection in Separated Flows T95-108
Mixed Convection in a Vertical Channel with Heated Blocks T95-086
Solutal Convection and Mass Transfer in Inclined Enclosures T95-034
Unsteady Three-Dimensional Mixed Convective Airflow over a Horizontal Plate T95-033
Role of Buoyancy in Fuel-Thermal-Stability Studies T95-021
Influence of Two-Phase Thermocapillary Flow on Liquid Retention in Microscopic Pores T95-020

Natural Convection

Free Convection in a Horizontal Enclosure Partly Filled with a Porous Medium T95-122
Low Prandtl Number Marangoni Convection with a Deforming Interface T95-121
Natural Convection in Horizontal-Layered Porous Annuli T95-120
Thermal Stratification Effects Near a Vertical Ice Slab in Cold Water T95-082
Natural Convection in Inclined Enclosures with Multiple Conducting Partitions T95-035

Nonintrusive Diagnostics

Experiments in Acoustic Levitation: Surface Tension Measurements of Deformed Droplets T95-105
Visualization of Solidification Process in Kinetics Control System with Interferometry T95-078
Heat Transfer Variation on Protuberances and Surface Roughness Elements T95-023

Radiation in Participating Media

Effect of Line Doppler Shift on Plume Infrared Signatures T95-097
Viscous Normal Shock Solutions Including Chemical, Thermal, and Radiative Nonequilibrium T95-090
Two-Parameter Wideband Spectral Model for the Absorption Coefficients of Molecular Gases T95-088
Implicit Solution Method for a Cumulative Variable Formulation to Radiative/Conductive Transport T95-083
Finite Volume Radiative Heat Transfer Procedure for Irregular Geometries T95-061
Scattering Characteristics of Fibrous Media Containing Closely Spaced Parallel Fibers T95-060
Spectrally Correlated Monte Carlo Formulations for Radiative Transfer in Multidimensional Systems T95-053
Transient Emittance Limit for Cooling a Semitransparent Radiating Layer T95-052
Transient Conductive and Radiative Heat Transfer in a Silica Window T95-051
Cumulative Variable Formulation for Transient Conductive and Radiative Transport in Participating Media T95-027
Non-Kirchhoff Surface Using Media with Directionally Varying Absorption Efficiency T95-026
Theoretical Investigation of Particles Having Directionally Dependent Absorption Cross Section T95-025
Refractive Index Effects on Transient Cooling of a Semitransparent Radiating Layer T95-007
Comparison of Discrete Ordinates Formulations for Radiative Heat Transfer in Multidimensional Geometries T95-006

Radiation Interchange Between Surfaces

Comparison of Reciprocity and Closure Enforcement Methods for Radiation View Factors T95-100
Surface Length Scale Contributions to the Directional and Hemispherical Emissivity and Reflectivity T95-099
Comparison of Theory with Atomic Oxygen Radiance Data from a Rocket Flight T95-096
Preliminary Temperature Stabilization of Space Telescopes T95-080
Finite Volume Radiative Heat Transfer Procedure for Irregular Geometries T95-061
Spectrally Correlated Monte Carlo Formulations for Radiative Transfer in Multidimensional Systems T95-053
Uncertainty Analysis of Diffuse-Gray Radiation Enclosure Problems T95-008

Thermal Control

Cassini Multilayer Insulation Blanket High-Temperature Exposure Tests T95-117
Sensor Cooling by Direct Blowdown of a Coolant T95-115
Effect of Spray Characteristics on Spray Cooling with Liquid Nitrogen T95-114
Free Expansion Study of Liquid Nitrogen T95-077
Contact Conductance of Selected Metal–Matrix Composites T95-058
Spray Cooling Characteristics Under Reduced Gravity T95-054
Dynamic Behavior of an Unheated Meniscus Subjected to Transient Acceleration Field T95-042
Two-Phase Cooling System with a Jet Pump for Spacecraft T95-037
Experimental Investigation of the Thermal Contact Conductance of Electroplated Silver Coatings T95-010

Thermal Modeling and Analysis

Natural Convection in Horizontal-Layered Porous Annuli T95-120
Projectile Fin Damage from Propellant Combustion T95-118
Galileo High-Gain Antenna Deployment Anomaly Thermal Analysis Support T95-116
Sensor Cooling by Direct Blowdown of a Coolant T95-115
Near-Isothermal Regenerator: A Perturbation Analysis T95-113
Analysis of Forced Convection Heat Transfer in Microencapsulated Phase Change Material Suspensions T95-110
Comparison of Reciprocity and Closure Enforcement Methods for Radiation View Factors T95-100
Modeling of Soot Formation and Oxidation in Turbulent Diffusion Flames T95-098
Particle Drag Coefficient in Solid Rocket Plumes T95-087
Thermodynamic Analysis of the Influence of Electric Fields on Frost Formation T95-085
Visualization of Solidification Process in Kinetics Control System with Interferometry T95-078
Analysis of the Photodiode Boundary-Layer Transition Indicator T95-073
Atomic Species Radiation from Air Modeled with Direct Simulation Monte Carlo Method T95-067
Vibrational Nonequilibrium Modeling Using Direct Simulation Part 1: Continuous Internal Energy T95-066
Thermal Response of Thin-Film High-T_c Superconductors to Modulated Irradiation T95-059
Modeling Transient Conduction from Isothermal Convex Bodies of Arbitrary Shape T95-057
Transient Conductive and Radiative Heat Transfer in a Silica Window T95-051
Modeling of Heat Transfer Processes at Catalytic Materials in Shock Tube T95-048
Estimation of Thermal Properties and Surface Heat Flux in Carbon-Carbon Composite T95-045
Two-Phase Cooling System with a Jet Pump for Spacecraft T95-037
Dependence of Heat Transfer to a Pulsating Stagnation Flow on Pulse Characteristics T95-024
Stirling Cryocooler Model with Stratified Cylinders and Quasisteady Heat Exchangers T95-017

Thermal Contact Resistance Between Balls and Rings of a Bearing Under Axial, Radial, and Combined Loads T95-011

Thermochemistry and Chemical Kinetics

Constitutive Convolution and Graph Theoretical Representations of Thermodynamic Processes: Thermal Conduction T95-102
Simultaneous Heat and Mass Transfer in Packed Bed Catalytic Reactors T95-076
Computation of Hypersonic Flows with Finite Catalytic Walls T95-071
Kinetics of Pyrolysis Mass Loss from Cured Phenolic Resin T95-046
Numerical Solutions to Nozzle Flows with Vibrational Nonequilibrium T95-029
Theory and Validation of the Physically Consistent Coupled Vibration-Chemistry-Vibration Model T95-028
Investigation of Chemical Affinity for Reacting Flows of Non-Local Thermal Equilibrium Gases T95-005
Estimation of Excitation Energy of Diatomic Molecules in Expanding Nonequilibrium Flows T95-002
Validation of Multitemperature Nozzle Flow Code T95-001

Thermophysical Properties

Flow of Nitrogen and Superheated Steam Through Cement Mortar T95-119
Cassini Multilayer Insulation Blanket High-Temperature Exposure Tests T95-117
Experiments in Acoustic Levitation: Surface Tension Measurements of Deformed Droplets T95-105
Effect of Surface Deformations on Thermal Contact Conductance of Coated Junctions T95-103
Constitutive Convolution and Graph Theoretical Representations of Thermodynamic Processes: Thermal Conduction T95-102
Function Estimation in Predicting Temperature-Dependent Thermal Conductivity Without Internal Measurements T95-101
Surface Length Scale Contributions to the Directional and Hemispherical Emissivity and Reflectivity T95-099
Effective Thermal Conductivity of a Saturated Porous Medium T95-089
Two-Parameter Wideband Spectral Model for the Absorption Coefficients of Molecular Gases T95-088
Towards a Theory of the Surface Conductance Coefficient in Solids T95-084
Behavior of a Meniscus Subjected to Transient Accelerations for Increasing Capillary Numbers T95-079
Atomic Species Radiation from Air Modeled with Direct Simulation Monte Carlo Method T95-067
Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 1: Model Development T95-064
Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 2: Results T95-065
Contact Conductance of Selected Metal–Matrix Composites T95-058
Transient Conductive and Radiative Heat Transfer in a Silica Window T95-051
Estimation of Thermal Properties and Surface Heat Flux in Carbon-Carbon Composite T95-045
Inverse Determination of Thermal Conductivity for One-Dimensional Problems T95-044
Enhancement of Thermal Contact Conductance of Coated Junctions T95-043
Dynamic Behavior of an Unheated Meniscus Subjected to Transient Acceleration Field T95-042

Author Index

Abe, Yoshiyuki, T95-054
Abu-Mulaweh, H. I., T95-108
Ahmed, G. Refai, T95-075
Alekseev, A. K., T95-072
Ambrose, J. H., T95-115
Amon, Cristina H., T95-032
Andrews, Malcolm J., T95-055
Antar, B. N., T95-039
Arai, Yoshito, T95-078
Armaly, B. F., T95-108
Asselin, P., T95-062
Auweter-Kurtz, Monika, T95-063
Babikian, Dikran S., T95-003
Babu, V., T95-029
Bamford, Douglas J., T95-003
Bauwens, Luc, T95-017, T95-113
Bayazitoglu, Yildiz, T95-105
Beck, J., T95-045
Bilgen, E., T95-035
Biringen, S., T95-106
Black, W. Z., T95-097
Blackwell, B., T95-045
Blanchard, D. G., T95-058
Blust, J., T95-021
Bories, S., T95-019
Botin, Andrei V., T95-030
Bouhouch, A., T95-019
Boytsev, Alexander V., T95-080
Bredikhin, Victor V., T95-037
Breuer, Kenneth S., T95-023
Brown, D. M., T95-074
Brueckner, Frank P., T95-031
Buckius, Richard O., T94-060, T95-099
Bundy, M. L., T95-118
Campbell, B. T., T95-093
Cancillo, María L., T95-084
Candler, Graham V., T95-091, T95-096
Capitelli, M., T95-124
Carlson, Leland A., T95-090
Carvalho, M. G., T95-098
Cayet, S., T95-062
Chai, John C., T95-061
Chambers, Lin Hartung, T95-091
Chao, Dennis C., T95-070
Chen, Han-Taw, T95-101
Chen, Kuan, T95-005
Chen, T. S., T95-108
Choquet, Isabelle, T95-066
Chow, L. C., T95-038
Chow, Louis C., T95-016, T95-040, T95-077, T95-114
Chui, Charlotte J., T95-040
Chung, B. T. F., T95-086
Chung, Kee-Chiang, T95-043, T95-103
Chung, T. J., T95-020
Coelho, P. J., T95-098
Cotta, R. M., T95-074
Culham, J. R., T95-057
Curry, Donald M., T95-070
Cziesla, T., T95-022
Dewson, T., T95-102
Dimenna, Ralph A., T94-060
Dogra, Virendra K., T95-068
Dolling, D. S., T95-094
Dong, Z. F., T95-123
Dowding, K., T95-045
Dudeck, M., T95-062
Dudek, S. J. M., T95-102
Duffa, Georges, T95-056
Duncan, A. B., T95-049
Dutta, Sandip, T95-055
Ebadian, M. A., T95-123
Eddy, Thomas L., T95-005
Edwards, Thomas A., T95-071
El-Genk, Mohamed S., T95-014
Faghri, Amir, T95-109, T95-110
Fairuzov, Yuri V., T95-037
Farhangnia, M., T95-106
Fasoulas, Stefanos, T95-063
Fields, John C., T95-087
Fiveland, W. A., T95-006
Fletcher, L. S., T95-010, T95-058
Frankel, Jay I., T95-027, T95-083
Frühauf, H.-H., T95-028
Gallis, M. A., T95-067
Gally, Thomas A., T95-090
Gau, C., T95-034
Giordano, D., T95-124
Gökçen, Tahir, T95-004
Goniak, Rémy, T95-056
Grzesik, Jan A., T95-060
Habib, I. S., T95-009
Habiger, Harald A., T95-063
Hahn, Ottfried J., T95-016, T95-040, T95-077, T95-114
Hallinan, Kevin P., T95-042, T95-079
Han, Je-Chin, T95-055
Hansman, R. John, Jr., T95-023
Harvey, J. K., T95-067
Hassan, H. A., T95-068, T95-069
Hayes, J., T95-045
Hedayatpour, A., T93-060
Henline, W. D., T95-091
Henry, Robert C., T95-023
Hewitt, C. R., Jr., T95-097
Hodge, B. K., T95-008
Horst, A. W., T95-118
Hosokawa, Shunsuke, T95-078
Howlett, L. Carl, T95-096
Hsu, I. C., T95-115
Huang, C. C., T95-033
Huang, Cheng-Hung, T95-101
Huang, Lianmin, T95-014
Ilinca, F., T95-107
Imadojemu, H. E., T95-089
Inger, George R., T95-092
Irving, A. D., T95-102
Iwasaki, Akira, T95-078
Jang, Jong Hoon, T95-015
Jeng, D. Z., T95-034
Jessee, J. P., T95-006
Jones, Peter D., T95-025, T95-026
Kakaç, S., T95-074
Kamiuto, K., T95-076, T95-088
Kangni, A., T95-035
Karr, Gerald R., T95-020
Kato, Masaya, T95-054
Katta, V. R., T95-021
Kawaji, M., T95-039
Knab, O., T95-028
Kudo, Isao, T95-078
Kukulka, David J., T95-082
Kuntz, David W., T95-073
Lafferty, J., T95-093
Lago, V., T95-062
Lai, F. C., T95-120
Lai, Y. G., T95-036
Lam, Tung T., T95-044
Lamb, John, T95-082
Lambert, M. A., T95-010
Laschefski, H., T95-022
Lasgorceix, P., T95-062
Laure, Stefan H., T95-063
Lawrence, Scott L., T95-071
Lee, HaeOk S., T95-061
Lee, J. J., T95-036
Lee, Seung-Ho, T95-001
Lee, Siu-Chun, T95-060
Leland, J. E., T95-038
Levin, Deborah A., T95-096
Li, H. H., T95-086
Lin, Edward I., T95-117
Lin, T. F., T95-033
Liu, J., T95-053
Liu, T., T95-093
Lu, Wenfeng, T95-077
Luck, Rogelio, T95-008, T95-100
Ma, H. B., T95-085
Mackowski, Daniel W., T95-025, T95-026
Manglik, R. M., T95-111
Martel, C. R., T95-021
McVay, Michael, T95-119
Messerschmid, E. W., T95-028
Miller, James H., T95-071
Mills, A. F., T95-018
Mitchell, Garrick F., T95-105
Mitchell, William J., T95-009
Mitra, N. K., T95-022
Miyasaka, Akihiro, T95-012
Mladin, E. C., T95-024
Mollendorf, Joseph C., T95-082
Molotilin, Y. A., T95-072
Moon, Bongki, T95-069
Morales, Juan J., T95-084
Mori, Yasuhiko H., T95-054
Moss, James N., T95-068
Mott, David R., T95-090
Mundrane, Michael R., T95-121
Nadarajah, Arun, T95-020
Nagashima, Akira, T95-054
Nakajima, Katsuhiko, T95-011, T95-012
Nance, Robert P., T95-069
Naylor, D., T95-122
Nelson, H. F., T95-087
Nguyen, H., T95-036
O'Keefe, Anthony, T95-003
Ochterbeck, J. M., T95-013, T95-041
Olynick, David R., T95-091
Oosthuizen, P. H., T95-122
Pais, Martin R., T95-016, T95-077, T95-114
Pan, C. P., T95-120
Park, Chul, T95-001, T95-002
Parthasarathy, Girija, T95-061
Patankar, Suhas V., T95-061
Payne, Jeffrey L., T95-073
Pelletier, D., T95-107
Peltier, L. J., T95-106
Pepper, Darrell W., T95-031
Peterson, G. P., T95-013, T95-041, T95-049, T95-085
Pham, Vuong T., T95-070
Phelan, Patrick E., T95-059
Porter, L. H., T95-089
Prat, M., T95-019
Provotorov, Victor P., T95-048
Prusa, J., T95-111
Ramalingam, M. L., T95-050
Ravikumar, K. V., T93-060
Reddy, N. M., T95-081
Reeve, R., T95-116
Riabov, Vladimir V., T95-030, T95-048
Rish, Jeff, III, T95-119
Robbins, F. W., T95-118
Ruffin, Stephen M., T95-064, T95-065
Saitoh, S., T95-076
Saltz, Joel, T95-069
Santos, C. A. C., T95-074
Schmidt, George R., T95-020
Schönemann, Anja T., T95-063, T95-095
Sehmbey, Maninder S., T95-016, T95-040, T95-077, T95-114
Sheffield, John W., T95-043
Shuvalov, M. P., T95-072
Siegel, Robert, T95-007, T95-052
Sleziona, P. Christian, T95-063
Sreekanth, T95-081
Steele, W. Glenn, T95-008
Stewart, David A., T95-003
Stokes, Eric H., T95-046
Strawa, Anthony W., T95-003
Stultz, James W., T95-117
Su, Ming-Horng, T95-051
Subramaniam, V. V., T95-029
Sullivan, J. P., T95-093
Sutton, William H., T95-051
Takei, Hideo, T95-078
Tannehill, John C., T95-071
Tao, W. Q., T95-123
Taylor, Jeff C., T95-068
Taylor, Robert P., T95-008, T95-100
Teertstra, P., T95-057
Thayer, K. L., T95-050
Tikhonov, Sergey V., T95-080
Tiwari, S. N., T95-053
Tournier, Jean-Michel, T95-014
Tsunoda, Hiroaki, T95-012
Tsuyuki, G., T95-116
Tzou, Da Yu, T95-104
Ulbrich, A., T95-045
Ungar, E. K., T95-013
Vasseur, P., T95-035
Wadawadigi, Ganesh, T95-071
Warren, G., T95-102
Watanabe, Toru, T95-078
Westbye, C. J., T95-039
Whiting, Ellis E., T95-096
Wilken, Andrew C., T95-073
Williams, S. D., T95-070
Williams, T. F., T95-021
Wilmoth, Richard G., T95-068, T95-069
Worek, William M., T95-112
Xin, R. C., T95-123
Yan, Jan-Yuan, T95-101
Yang, Yongqing, T95-099
Yanta, W., T95-093
Yeh, Rong-Hua, T95-047
Yerkes, Kirk L., T95-042, T95-079
Yeung, Wing K., T95-044
Youn, B., T95-018
Young, Timothy J., T95-050
Yovanovich, M. M., T95-057, T95-075
Yüceil, K. B., T95-094
Zebib, Abdelfattah, T95-121
Zhang, Yuwen, T95-109, T95-110
Zheng, Guoji S., T95-112
Zumbrunnen, D. A., T95-024

Chronological Index

T93-060 Cool-Down of a Vertical Line with Liquid Nitrogen. A. Hedayatpour and B. N. Antar, *University of Tennessee Space Institute*; and M. Kawaji, *University of Toronto, Canada* (**7**, 3, p. 426) Article

Technical Comment by K. V. Ravikumar, *University of California, Los Angeles* (**9**, 3, p. 576)

Reply (**9**, 3, p. 576)

T94-060 Quantifying Specular Approximations for Angular Scattering from Perfectly Conducting Random Rough Surfaces. Ralph A. Dimenna and Richard O. Buckius, *University of Illinois at Urbana–Champaign* (**8**, 3, p. 393) Article

Errata (**9**, 4, p. 805)

T95-001 Validation of Multitemperature Nozzle Flow Code. Chul Park, *NASA Ames Research Center*; and Seung-Ho Lee, *Eloret Institute* (**9**, 1, p. 9) Article based on AIAA Paper 93-2862

T95-002 Estimation of Excitation Energy of Diatomic Molecules in Expanding Nonequilibrium Flows. Chul Park, *NASA Ames Research Center* (**9**, 1, p. 17) Article based on AIAA Paper 92-0805

T95-003 Characterization of Arcjet Flows Using Laser-Induced Fluorescence. Douglas J. Bamford, *Deacon Research*; Anthony O'Keefe, *Los Gatos Research*; and Dikran S. Babikian, David A. Stewart, and Anthony W. Strawa, *NASA Ames Research Center* (**9**, 1, p. 26) Article based on AIAA Paper 94-0690

T95-004 Computation of Nonequilibrium Radiating Shock Layers. Tahir Gökçen, *Eloret Institute* (**9**, 1, p. 34) Article based on AIAA Paper 93-0144

T95-005 Investigation of Chemical Affinity for Reacting Flows of Non-Local Thermal Equilibrium Gases. Kuan Chen, *University of Utah*; and Thomas L. Eddy, *EG & G Idaho* (**9**, 1, p. 41) Article based on AIAA Paper 93-3225

T95-006 Comparison of Discrete Ordinates Formulations for Radiative Heat Transfer in Multidimensional Geometries. W. A. Fiveland and J. P. Jessee, *Babcock & Wilcox* (**9**, 1, p. 47) Article

T95-007 Refractive Index Effects on Transient Cooling of a Semitransparent Radiating Layer. Robert Siegel, *NASA Lewis Research Center* (**9**, 1, p. 55) Article

T95-008 Uncertainty Analysis of Diffuse-Gray Radiation Enclosure Problems. Robert P. Taylor, Rogelio Luck, B. K. Hodge, and W. Glenn Steele, *Mississippi State University* (**9**, 1, p. 63) Article based on AIAA Paper 94-0132

T95-009 Melting of a Cylindrical Polymeric Medium Subjected to Cyclic Torsional Shear Stress. William J. Mitchell and I. S. Habib, *University of Michigan–Dearborn* (**9**, 1, p. 70) Article

T95-010 Experimental Investigation of the Thermal Contact Conductance of Electroplated Silver Coatings. M. A. Lambert and L. S. Fletcher, *Texas A&M University* (**9**, 1, p. 79) Article based on AIAA Paper 93-0846

T95-011 Thermal Contact Resistance Between Balls and Rings of a Bearing Under Axial, Radial, and Combined Loads. Katsuhiko Nakajima, *NTT Radio Communication Systems Laboratories, Japan* (**9**, 1, p. 88) Article

T95-012 Experimental Results for Capillary Looped Pipe Applied to Direct Cooling Method. Akihiro Miyasaka, Katsuhiko Nakajima, and Hiroaki Tsunoda, *NTT Radio Communication Systems Laboratories, Japan* (**9**, 1, p. 96) Article based on AIAA Paper 93-2747

T95-013 Depriming/Rewetting of Arterial Heat Pipes: Comparison with Share-II Flight Experiment. J. M. Ochterbeck and G. P. Peterson, *Texas A&M University*; and E. K. Ungar, *NASA Johnson Space Center* (**9**, 1, p. 101) Article based on AIAA Paper 93-0282

T95-014 Transient Experiments of an Inclined Copper-Water Heat Pipe. Mohamed S. El-Genk, Lianmin Huang, and Jean-Michel Tournier, *University of New Mexico* (**9**, 1, p. 109) Article

T95-015 Startup Characteristics of a Potassium Heat Pipe from the Frozen State. Jong Hoon Jang, *Sverdrup Technology, Inc.* (**9**, 1, p. 117) Article

T95-016 Spray Cooling of Power Electronics at Cryogenic Temperatures. Maninder S. Sehmbey, Louis C. Chow, Ottfried J. Hahn, and Martin R. Pais, *University of Kentucky* (**9**, 1, p. 123) Article

T95-017 Stirling Cryocooler Model with Stratified Cylinders and Quasisteady Heat Exchangers. Luc Bauwens, *University of Calgary, Canada* (**9**, 1, p. 129) Article

T95-018 Cooling Panel Optimization for the Active Cooling System of a Hypersonic Aircraft. B. Youn and A. F. Mills, *University of California, Los Angeles* (**9**, 1, p. 136) Article

T95-019 Transient Compressible Flow and Heat Transfer Within a Heterogeneous Porous System. A. Bouhouch, M. Prat, and S. Bories, *Institut de Mécanique des Fluides de Toulouse, France* (**9**, 1, p. 144) Article

T95-020 Influence of Two-Phase Thermocapillary Flow on Liquid Retention in Microscopic Pores. George R. Schmidt, *NASA Marshall Space Flight Center*; and Arun Nadarajah, T. J. Chung, and Gerald R. Karr, *University of Alabama in Huntsville* (**9**, 1, p. 151) Article based on AIAA Paper 94-0836

T95-021 Role of Buoyancy in Fuel-Thermal-Stability Studies. V. R. Katta, *Systems Research Laboratories, Inc.*; and J. Blust, T. F. Williams, and C. R. Martel, *University of Dayton Research Institute* (**9**, 1, p. 159) Article

T95-022 Influence of Exit Angle on Radial Jet Reattachment and Heat Transfer. H. Laschefski, T. Cziesla, and N. K. Mitra, *Ruhr-Universität Bochum, Germany* (**9**, 1, p. 169) Article

T95-023 Heat Transfer Variation on Protuberances and Surface Roughness Elements. Robert C. Henry, *ONERA, France*; and R. John Hansman Jr., and Kenneth S. Breuer, *Massachusetts Institute of Technology* (**9**, 1, p. 175) Article based on AIAA Paper 94-0801

T95-024 Dependence of Heat Transfer to a Pulsating Stagnation Flow on Pulse Characteristics. E. C. Mladin and D. A. Zumbrunnen, *Clemson University* (**9**, 1, p. 181) Article

T95-025 Theoretical Investigation of Particles Having Direc-

tionally Dependent Absorption Cross Section. Daniel W. Mackowski and Peter D. Jones, *Auburn University* (**9**, 2, p. 193) Article

T95-026 Non-Kirchhoff Surface Using Media with Directionally Varying Absorption Efficiency. Peter D. Jones and Daniel W. Mackowski, *Auburn University* (**9**, 2, p. 202) Article

T95-027 Cumulative Variable Formulation for Transient Conductive and Radiative Transport in Participating Media. Jay I. Frankel, *University of Tennessee* (**9**, 2, p. 210) Article

T95-028 Theory and Validation of the Physically Consistent Coupled Vibration-Chemistry-Vibration Model. O. Knab, H.-H. Frühauf, and E. W. Messerschmid, *University of Stuttgart, Germany* (**9**, 2, p. 219) Article

T95-029 Numerical Solutions to Nozzle Flows with Vibrational Nonequilibrium. V. Babu and V. V. Subramaniam, *Ohio State University* (**9**, 2, p. 227) Article

T95-030 Hypersonic Hydrogen Combustion in the Thin Viscous Shock Layer. Vladimir V. Riabov, *Worcester Polytechnic Institute*; and Andrei V. Botin, *Central Aerohydrodynamics Institute, Russia* (**9**, 2, p. 233) Article based on AIAA Paper 94-2027

T95-031 Parallel Finite Element Algorithm for Three-Dimensional Inviscid and Viscous Flow. Frank P. Brueckner, *Hughes Missile Systems Company*; and Darrell W. Pepper, *University of Nevada, Las Vegas* (**9**, 2, p. 240) Article based on AIAA Paper 93-0340

T95-032 Spectral Element-Fourier Method for Unsteady Conjugate Heat Transfer in Complex Geometry Flows. Cristina H. Amon, *Carnegie–Mellon University* (**9**, 2, p. 247) Article based on AIAA Paper 93-2769

T95-033 Unsteady Three-Dimensional Mixed Convective Airflow over a Horizontal Plate. C. C. Huang and T. F. Lin, *National Chiao Tung University, Taiwan, ROC* (**9**, 2, p. 254) Article based on AIAA Paper 94-0206

T95-034 Solutal Convection and Mass Transfer in Inclined Enclosures. C. Gau and D. Z. Jeng, *National Cheng Kung University, Taiwan, ROC* (**9**, 2, p. 262) Article

T95-035 Natural Convection in Inclined Enclosures with Multiple Conducting Partitions. A. Kangni, P. Vasseur, and E. Bilgen, *University of Montreal, Canada* (**9**, 2, p. 270) Article

T95-036 Coupled Thermofluid Analysis Method with Application to Thermodynamic Vent Systems. Y. G. Lai, H. Nguyen, and J. J. Lee, *CFD Research Corporation* (**9**, 2, p. 278) Article

T95-037 Two-Phase Cooling System with a Jet Pump for Spacecraft. Yuri V. Fairuzov, *National University of Mexico*; and Victor V. Bredikhin, *Kharkov Aviation Institute, Ukraine* (**9**, 2, p. 285) Article

T95-038 Channel Height and Curvature Effects on Flow Boiling from an Electronic Chip. J. E. Leland, *U.S. Air Force Wright Laboratory*; and L. C. Chow, *University of Kentucky* (**9**, 2, p. 292) Article based on AIAA Paper 92-0250

T95-039 Boiling Heat Transfer in the Quenching of a Hot Tube Under Microgravity. C. J. Westbye and M. Kawaji, *University of Toronto, Canada*; and B. N. Antar, *University of Tennessee Space Institute* (**9**, 2, p. 302) Article

T95-040 Pool Boiling Heat Transfer from Vertical Heater Array in Liquid Nitrogen. Charlotte J. Chui, *Paul Laurence Dunbar High School*; and Maninder S. Sehmbey, Louis C. Chow, and Ottfried J. Hahn, *University of Kentucky* (**9**, 2, p. 308) Article based on AIAA Paper 94-1992

T95-041 Investigation of the Freezing Blowby Phenomenon in Heat Pipes. J. M. Ochterbeck and G. P. Peterson, *Texas A&M University* (**9**, 2, p. 314) Article based on AIAA Paper 92-2909

T95-042 Dynamic Behavior of an Unheated Meniscus Subjected to Transient Acceleration Field. Kirk L. Yerkes, *U.S. Air Force Wright Laboratory*; and Kevin P. Hallinan, *University of Dayton* (**9**, 2, p. 322) Article

T95-043 Enhancement of Thermal Contact Conductance of Coated Junctions. Kee-Chiang Chung, *National Yunlin Institute of Technology, Taiwan, ROC*; and John W. Sheffield, *University of Missouri–Rolla* (**9**, 2, p. 329) Article

T95-044 Inverse Determination of Thermal Conductivity for One-Dimensional Problems. Tung T. Lam and Wing K. Yeung, *The Aerospace Corporation* (**9**, 2, p. 335) Article based on AIAA Paper 94-0121

T95-045 Estimation of Thermal Properties and Surface Heat Flux in Carbon-Carbon Composite. K. Dowding, J. Beck, and A. Ulbrich, *Michigan State University*; B. Blackwell, *Sandia National Laboratories*; and J. Hayes, *U.S. Air Force Wright Laboratory* (**9**, 2, p. 345) Article based on AIAA Paper 94-1963

T95-046 Kinetics of Pyrolysis Mass Loss from Cured Phenolic Resin. Eric H. Stokes, *Southern Research Institute* (**9**, 2, p. 352) Article based on AIAA Paper 94-3182

T95-047 On Optimum Spines. Rong-Hua Yeh, *National Taiwan Ocean University, ROC* (**9**, 2, p. 359) Article

T95-048 Modeling of Heat Transfer Processes at Catalytic Materials in Shock Tube. Vladimir V. Riabov, *Worcester Polytechnic Institute*; and Victor P. Provotorov, *Central Aerohydrodynamics Institute, Russia* (**9**, 2, p. 363) Technical Note based on AIAA Paper 94-2071

T95-049 Charge Optimization for a Triangular-Shaped Etched Micro Heat Pipe. A. B. Duncan, *University of Illinois at Chicago*; and G. P. Peterson, *Texas A&M University* (**9**, 2, p. 365) Technical Note

T95-050 High-Temperature Performance of an Integral Cesium Reservoir in a Thermionic Converter. K. L. Thayer and M. L. Ramalingam, *UES, Inc.*; and Timothy J. Young, *U.S. Air Force Wright Laboratory* (**9**, 2, p. 368) Technical Note

T95-051 Transient Conductive and Radiative Heat Transfer in a Silica Window. Ming-Horng Su and William H. Sutton, *University of Oklahoma* (**9**, 2, p. 370) Technical Note

T95-052 Transient Emittance Limit for Cooling a Semitransparent Radiating Layer. Robert Siegel, *NASA Lewis Research Center* (**9**, 2, p. 373) Technical Note

T95-053 Spectrally Correlated Monte Carlo Formulations for Radiative Transfer in Multidimensional Systems. J. Liu and S. N. Tiwari, *Old Dominion University* (**9**, 2, p. 375) Technical Note

T95-054 Spray Cooling Characteristics Under Reduced Grav-

ity. Masaya Kato, *Keio University, Japan*; Yoshiyuki Abe, *Electrotechnical Laboratory, Japan*; and Yasuhiko H. Mori and Akira Nagashima, *Keio University, Japan* (**9**, 2, p. 378) Technical Note

T95-055 Simulation of Turbulent Heat Transfer in a Rotating Duct. Sandip Dutta, Malcolm J. Andrews, and Je-Chin Han, *Texas A&M University* (**9**, 2, p. 381) Technical Note

T95-056 Corrective Term in Wall Slip Equations for Knudsen Layer. Rémy Goniak and Georges Duffa, *Commissariat à l'Energie Atomique, France* (**9**, 2, p. 383) Technical Note

T95-057 Modeling Transient Conduction from Isothermal Convex Bodies of Arbitrary Shape. M. M. Yovanovich, P. Teertstra, and J. R. Culham, *University of Waterloo, Canada* (**9**, 3, p. 385) Article based on AIAA Paper 94-1976

T95-058 Contact Conductance of Selected Metal–Matrix Composites. D. G. Blanchard and L. S. Fletcher, *Texas A&M University* (**9**, 3, p. 391) Article based on AIAA Paper 92-2847

T95-059 Thermal Response of Thin-Film High-T_c Superconductors to Modulated Irradiation. Patrick E. Phelan, *University of Hawaii at Manoa* (**9**, 3, p. 397) Article based on AIAA Paper 94-2080

T95-060 Scattering Characteristics of Fibrous Media Containing Closely Spaced Parallel Fibers. Siu-Chun Lee and Jan A. Grzesik, *Applied Sciences Laboratory, Inc.* (**9**, 3, p. 403) Article based on AIAA Paper 94-2904

T95-061 Finite Volume Radiative Heat Transfer Procedure for Irregular Geometries. John C. Chai and Girija Parthasarathy, *University of Minnesota*; HaeOk S. Lee, *NASA Lewis Research Center*; and Suhas V. Patankar, *University of Minnesota* (**9**, 3, p. 410) Article

T95-062 Mass Spectrometric and Electrostatic Probe Measurements of N_2/O_2 Plasma Flow. P. Asselin, S. Cayet, P. Lasgorceix, V. Lago, and M. Dudeck, *Centre Nationale de la Recherche Scientifique, France* (**9**, 3, p. 416) Article

T95-063 Characterization of a Nitrogen Flow Within a Plasma Wind Tunnel. Stefanos Fasoulas, P. Christian Sleziona, Monika Auweter-Kurtz, Harald A. Habiger, Stefan H. Laure, and Anja T. Schönemann, *University of Stuttgart, Germany* (**9**, 3, p. 422) Article based on AIAA Paper 93-2817

T95-064 Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 1: Model Development. Stephen M. Ruffin, *Georgia Institute of Technology* (**9**, 3, p. 432) Article based on AIAA Paper 94-0456

T95-065 Prediction of Vibrational Relaxation in Hypersonic Expanding Flows Part 2: Results. Stephen M. Ruffin, *Georgia Institute of Technology* (**9**, 3, p. 438) Article based on AIAA Paper 94-0456

T95-066 Vibrational Nonequilibrium Modeling Using Direct Simulation Part 1: Continuous Internal Energy. Isabelle Choquet, *ONERA, France* (**9**, 3, p. 446) Article

T95-067 Atomic Species Radiation from Air Modeled with Direct Simulation Monte Carlo Method. M. A. Gallis and J. K. Harvey, *Imperial College of Science, Technology, and Medicine, England, UK* (**9**, 3, p. 456) Article

T95-068 Blunt Body Rarefied Wakes for Earth Entry. Virendra K. Dogra, *Science and Technology Corporation*; James N. Moss and Richard G. Wilmoth, *NASA Langley Research Center*; and Jeff C. Taylor and H. A. Hassan, *North Carolina State University* (**9**, 3, p. 464) Article based on AIAA Paper 94-2016

T95-069 Parallel Monte Carlo Simulation of Three-Dimensional Flow over a Flat Plate. Robert P. Nance, *North Carolina State University*; Richard G. Wilmoth, *NASA Langley Research Center*; Bongki Moon, *University of Maryland*; H. A. Hassan, *North Carolina State University*; and Joel Saltz, *University of Maryland* (**9**, 3, p. 471) Article based on AIAA Paper 94-2019

T95-070 Ablation Analysis of the Shuttle Orbiter Oxidation Protected Reinforced Carbon–Carbon. S. D. Williams, *Lockheed Engineering and Sciences Company, Inc.*; Donald M. Curry, *NASA Johnson Space Flight Center*; Dennis C. Chao, *Rockwell International Corporation*; and Vuong T. Pham, *NASA Johnson Space Flight Center* (**9**, 3, p. 478) Article based on AIAA Paper 94-2084

T95-071 Computation of Hypersonic Flows with Finite Catalytic Walls. James H. Miller, John C. Tannehill, and Ganesh Wadawadigi, *Iowa State University*; and Thomas A. Edwards and Scott L. Lawrence, *NASA Ames Research Center* (**9**, 3, p. 486) Article based on AIAA Paper 94-2354

T95-072 Indirect Determination of Heat Flux to a Lander Heat Protection System. A. K. Alekseev, Y. A. Molotilin, and M. P. Shuvalov, *ENERGIA Corporation, Russia* (**9**, 3, p. 494) Article

T95-073 Analysis of the Photodiode Boundary-Layer Transition Indicator. David W. Kuntz, Andrew C. Wilken, and Jeffrey L. Payne, *Sandia National Laboratories* (**9**, 3, p. 499) Article based on AIAA Paper 94-0454

T95-074 Analysis of Unsteady Forced Convection in Turbulent Duct Flow. C. A. C. Santos, D. M. Brown, and S. Kakaç, *University of Miami*; and R. M. Cotta, *Universidade Federal do Rio de Janeiro, Brazil* (**9**, 3, p. 508) Article

T95-075 Analytical Method for Forced Convection from Flat Plates, Circular Cylinders, and Spheres. G. Refai Ahmed and M. M. Yovanovich, *University of Waterloo, Canada* (**9**, 3, p. 516) Article based on AIAA Paper 94-1971

T95-076 Simultaneous Heat and Mass Transfer in Packed Bed Catalytic Reactors. K. Kamiuto and S. Saitoh, *Oita University, Japan* (**9**, 3, p. 524) Article

T95-077 Free Expansion Study of Liquid Nitrogen. Wenfeng Lu, Maninder S. Sehmbey, Louis C. Chow, Ottfried J. Hahn, and Martin R. Pais, *University of Kentucky* (**9**, 3, p. 531) Article based on AIAA Paper 94-1966

T95-078 Visualization of Solidification Process in Kinetics Control System with Interferometry. Akira Iwasaki, Shunsuke Hosokawa, and Isao Kudo, *Electrotechnical Laboratory, Japan*; and Hideo Takei, Yoshito Arai, Toru Watanabe, and Takatoshi Kawai, *Ishikawajima–Harima Heavy Industries, Japan* (**9**, 3, p. 537) Article

T95-079 Behavior of a Meniscus Subjected to Transient Accelerations for Increasing Capillary Numbers. Kirk L. Yerkes, *U.S. Air Force Wright Laboratory*; and Kevin P. Hallinan, *University of Dayton* (**9**, 3, p. 543) Article

T95-080 Preliminary Temperature Stabilization of Space

Telescopes. Sergey V. Tikhonov and Alexander V. Boytsev, *Heat Transfer Laboratory, Russia* (**9**, 3, p. 550) Technical Note

T95-081 Study of Transpiration Cooling over a Flat Plate at Hypersonic Mach Numbers. Sreekanth and N. M. Reddy, *Indian Institute of Science* (**9**, 3, p. 552) Technical Note based on AIAA Paper 94-2075

T95-082 Thermal Stratification Effects Near a Vertical Ice Slab in Cold Water. David J. Kukulka, *State University of New York at Buffalo*; John Lamb, *Consolidated Edison*; and Joseph C. Mollendorf, *State University of New York at Buffalo* (**9**, 3, p. 555) Technical Note

T95-083 Implicit Solution Method for a Cumulative Variable Formulation to Radiative/Conductive Transport. J. I. Frankel, *University of Tennessee* (**9**, 3, p. 558) Technical Note

T95-084 Towards a Theory of the Surface Conductance Coefficient in Solids. María L. Cancillo and Juan J. Morales, *Universidad de Extremadura, Spain* (**9**, 3, p. 560) Article

T95-085 Thermodynamic Analysis of the Influence of Electric Fields on Frost Formation. H. B. Ma and G. P. Peterson, *Texas A&M University* (**9**, 3, p. 562) Technical Note

T95-086 Mixed Convection in a Vertical Channel with Heated Blocks. H. H. Li and B. T. F. Chung, *University of Akron* (**9**, 3, p. 564) Technical Note

T95-087 Particle Drag Coefficient in Solid Rocket Plumes. H. F. Nelson and John C. Fields, *University of Missouri–Rolla* (**9**, 3, p. 567) Technical Note

T95-088 Two-Parameter Wideband Spectral Model for the Absorption Coefficients of Molecular Gases. K. Kamiuto, *Oita University, Japan* (**9**, 3, p. 569) Technical Note

T95-089 Effective Thermal Conductivity of a Saturated Porous Medium. H. E. Imadojemu and L. H. Porter, *Pennsylvania State University at Harrisburg* (**9**, 3, p. 573) Technical Note

T95-090 Viscous Normal Shock Solutions Including Chemical, Thermal, and Radiative Nonequilibrium. David R. Mott, *University of Michigan*; Thomas A. Gally, *American University in Cairo, Egypt*; and Leland A. Carlson, *Texas A&M University* (**9**, 4, p. 577) Article based on AIAA Paper 94-2415

T95-091 Comparison of Coupled Radiative Flow Solutions with Project Fire II Flight Data. David R. Olynick and W. D. Henline, *NASA Ames Research Center*; Lin Hartung Chambers, *NASA Langley Research Center*; and G. V. Candler, *University of Minnesota* (**9**, 4, p. 586) Article based on AIAA Paper 94-1955

T95-092 Nonequilibrium Boundary-Layer Effects on the Aerodynamic Heating of Hypersonic Waverider Vehicles. George R. Inger, *Iowa State University* (**9**, 4, p. 595) Article

T95-093 Heat Transfer Measurement on a Waverider at Mach 10 Using Fluorescent Paint. T. Liu, B. T. Campbell, and J. P. Sullivan, *Purdue University*; and J. Lafferty and W. Yanta, *U.S. Naval Surface Warfare Center* (**9**, 4, p. 605) Article based on AIAA Paper 94-2484

T95-094 Nose Cavity Effects on Blunt Body Pressure and Temperatures at Mach 5. K. B. Yüceil and D. S. Dolling, *University of Texas at Austin* (**9**, 4, p. 612) Article

T95-095 Mass Spectrometric Investigation of High Enthalpy Plasma Flows. Anja Schönemann and Monika Auweter-Kurtz, *University of Stuttgart, Germany* (**9**, 4, p. 620) Article

T95-096 Comparison of Theory with Atomic Oxygen Radiance Data from a Rocket Flight. Deborah A. Levin, *Institute for Defense Analyses*; Graham V. Candler, *University of Minnesota*; L. Carl Howlett, *Utah State University*; and Ellis E. Whiting, *Eloret Institute* (**9**, 4, p. 629) Article based on AIAA Paper 93-2811

T95-097 Effect of Line Doppler Shift on Plume Infrared Signatures. C. R. Hewitt Jr., *Ball Corporation*; and W. Z. Black, *Georgia Institute of Technology* (**9**, 4, p. 636) Article based on AIAA Paper 94-2065

T95-098 Modeling of Soot Formation and Oxidation in Turbulent Diffusion Flames. P. J. Coelho and M. G. Carvalho, *Instituto Superior Técnico, Portugal* (**9**, 4, p. 644) Article

T95-099 Surface Length Scale Contributions to the Directional and Hemispherical Emissivity and Reflectivity. Yongqing Yang and Richard O. Buckius, *University of Illinois at Urbana–Champaign* (**9**, 4, p. 653) Article

T95-100 Comparison of Reciprocity and Closure Enforcement Methods for Radiation View Factors. Robert P. Taylor and Rogelio Luck, *Mississippi State University* (**9**, 4, p. 660) Article

T95-101 Function Estimation in Predicting Temperature-Dependent Thermal Conductivity Without Internal Measurements. Cheng-Hung Huang, Jan-Yuan Yan, and Han-Taw Chen, *National Cheng Kung University, Taiwan, ROC* (**9**, 4, p. 667) Article

T95-102 Constitutive Convolution and Graph Theoretical Representations of Thermodynamic Processes: Thermal Conduction. A. D. Irving, *Rutherford Appleton Laboratory, England, UK*; S. J. M. Dudek, *University of Newcastle, England, UK*; T. Dewson, *University of Bristol, England, UK*; and G. Warren, *British Gas Plc., England, UK* (**9**, 4, p. 674) Article

T95-103 Effect of Surface Deformations on Thermal Contact Conductance of Coated Junctions. Kee-Chiang Chung, *National Yunlin Institute of Technology, Taiwan, ROC* (**9**, 4, p. 681) Article

T95-104 Experimental Support for the Lagging Behavior in Heat Propagation. Da Yu Tzou, *University of New Mexico* (**9**, 4, p. 686) Article

T95-105 Experiments in Acoustic Levitation: Surface Tension Measurements of Deformed Droplets. Yildiz Bayazitoglu and Garrick F. Mitchell, *Rice University* (**9**, 4, p. 694) Article

T95-106 Numerical Simulation of Time-Dependent Thermocapillary Convection in Layered Fluid Systems. L. J. Peltier, S. Biringen, and M. Farhangnia, *University of Colorado* (**9**, 4, p. 702) Article

T95-107 Adaptive Finite Element Method for Mixed Convection. D. Pelletier and F. Ilinca, *École Polytechnique de Montréal, Canada* (**9**, 4, p. 708) Article based on AIAA Paper 94-0347

T95-108 Effects of Upstream Wall Heating on Mixed Convection in Separated Flows. H. I. Abu-Mulaweh, B. F. Armaly, and T. S. Chen, *University of Missouri–Rolla* (**9**, 4, p. 715) Article

T95-109 Analysis of Thermal Energy Storage System with

Conjugate Turbulent Forced Convection. Yuwen Zhang and Amir Faghri, *University of Connecticut* (**9**, 4, p. 722) Article

T95-110 Analysis of Forced Convection Heat Transfer in Microencapsulated Phase Change Material Suspensions. Yuwen Zhang and Amir Faghri, *University of Connecticut* (**9**, 4, p. 727) Article

T95-111 Viscous Dissipation in Non-Newtonian Flows: Implications for the Nusselt Number. R. M. Manglik, *University of Cincinnati*; and J. Prusa, *Iowa State University* (**9**, 4, p. 733) Article

T95-112 Effect of Additives on the Regeneration of a Dilute Absorbent. Guoji S. Zheng and William M. Worek, *University of Illinois at Chicago* (**9**, 4, p. 743) Article

T95-113 Near-Isothermal Regenerator: A Perturbation Analysis. Luc Bauwens, *University of Calgary, Canada* (**9**, 4, p. 749) Article

T95-114 Effect of Spray Characteristics on Spray Cooling with Liquid Nitrogen. Maninder S. Sehmbey, Louis C. Chow, Ottfried J. Hahn, and Martin R. Pais, *University of Kentucky* (**9**, 4, p. 757) Article based on AIAA Paper 94-2010

T95-115 Sensor Cooling by Direct Blowdown of a Coolant. J. H. Ambrose and I. C. Hsu, *Lockheed Research and Development Division* (**9**, 4, p. 766) Article based on AIAA Paper 94-2078

T95-116 Galileo High-Gain Antenna Deployment Anomaly Thermal Analysis Support. G. Tsuyuki and R. Reeve, *Jet Propulsion Laboratory, California Institute of Technology* (**9**, 4, p. 771) Article based on AIAA Paper 94-2003

T95-117 Cassini Multilayer Insulation Blanket High-Temperature Exposure Tests. Edward I. Lin and James W. Stultz, *Jet Propulsion Laboratory, California Institute of Technology* (**9**, 4, p. 778) Article based on AIAA Paper 95-0633

T95-118 Projectile Fin Damage from Propellant Combustion. M. L. Bundy, A. W. Horst, and F. W. Robbins, *U.S. Army Research Laboratory* (**9**, 4, p. 784) Article

T95-119 Flow of Nitrogen and Superheated Steam Through Cement Mortar. Michael McVay, *University of Florida*; and Jeff Rish III, *U.S. Air Force Civil Engineering Support Agency* (**9**, 4, p. 790) Technical Note

T95-120 Natural Convection in Horizontal-Layered Porous Annuli. C. P. Pan and F. C. Lai, *University of Oklahoma* (**9**, 4, p. 792) Technical Note based on AIAA Paper 95-0417

T95-121 Low Prandtl Number Marangoni Convection with a Deforming Interface. Michael R. Mundrane and Abdelfattah Zebib, *Rutgers University* (**9**, 4, p. 795) Technical Note

T95-122 Free Convection in a Horizontal Enclosure Partly Filled with a Porous Medium. D. Naylor, *Ryerson Polytechnic University, Canada*; and P. H. Oosthuizen, *Queen's University, Canada* (**9**, 4, p. 797) Technical Note

T95-123 Forced Convection in Ducts with a Boundary Condition of the Third Kind. R. C. Xin, Z. F. Dong, and M. A. Ebadian, *Florida International University*; and W. Q. Tao, *Xi'an Jiatong University, PRC* (**9**, 4, p. 800) Technical Note

T95-124 Two-Temperature Saha Equation: A Misunderstood Problem. D. Giordano, *European Space Research and Technology Center, The Netherlands*; and M. Capitelli, *University of Bari, Italy* (**9**, 4, p. 803) Technical Note